This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-28(canceled).

29(new). A method of analyzing waveform data of a test sample using a programmable logic analyzer, the programmable logic and analyzer comprising a control circuit for fetching the waveform data from the test sample, a memory for storing the fetched waveform data, wherein the programmable logic analyzer is connected to a computer so that the stored waveform data is transmitted to the computer for running tests on the waveform data received from the programmable logic analyzer, the method comprising:

storing the waveform data of the test sample into the memory;

determining whether the stored waveform data of the test sample meets with a predetermined feature specification;

transmitting the waveform data to a computer, wherein the computer performs a waveform analysis of the waveform data of the test sample; and

displaying a result of the waveform analysis on a display.

30(new). The method of claim 29, wherein the step of performing waveform analysis comprises a debugging data analysis.

31(new). The method of claim 29, wherein the step of performing waveform analysis comprises a waveform data quality analysis.

32(new). The method of claim 29, wherein the step of performing waveform analysis comprises a comparison data quality analysis.

33(new). The method of claim 29, wherein the step of performing waveform analysis comprises a search data quality analysis.

34(new). The method of claim 29, further comprising a step of compressing the fetched waveform data of the test sample prior to storing in the memory.

35(new). The method of claim 34, further comprising a step of decompressing the compressed waveform data of the test sample prior to display on the display.

36(new). The method of claim 29, further comprising a step of printing the results displayed on the display.

37(new). The method of claim 29, further comprising a step of saving the result in a file.

38(new). The method of claim 29, wherein if the waveform data do not meet with the predetermined specification, waveform display zone is marked with a different color.

39(new). A programmable logic analyzer connected to a computer, comprising a control circuit, for fetching waveform data from a test sample; and
a memory, for storing the fetched waveform data;
wherein the computer is adopted for performing a waveform analysis of the waveform data of the test sample stored in the memory when the waveform data of the test sample meets with a predetermined specification and displaying a result on a display.

40(new). The programmable logic analyzer of claim 39, wherein the waveform analysis comprises a debugging data analysis.

41(new). The programmable logic analyzer of claim 39, wherein the waveform analysis comprises a waveform data quality analysis.

42(new). The programmable logic analyzer of claim 39, wherein the waveform analysis comprises a comparison data analysis.

43(new). The programmable logic analyzer of claim 39, wherein the waveform analysis comprises a search data quality analysis.

44(new). The programmable logic analyzer of claim 39, further comprising a compressor connected to the memory for compressing the fetched waveform data of the test sample prior to storing in the memory.

45(new). The programmable logic analyzer of claim 44, further comprising a decompressor connected to the memory for decompressing the compressed waveform data of the test sample prior to display on the display.

46(new). The programmable logic analyzer of claim 39, further comprising a printer connected to the computer for printing the result display on the display.

47(new). The programmable logic analyzer of claim 39, the result is saved in a file.

48(new). The method of claim 39, wherein if the stored waveform data of the test sample do not meet the predetermined feature specification, waveform display zone is marked with a different color.